: 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RTID 0648-XB812

Endangered and Threatened Species; Take of Anadromous Fish

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of Receipt of Applications; for 37 permit renewals, three permit modifications, and 12 new permits.

SUMMARY: Notice is hereby given that NMFS has received 52 scientific research permit application requests relating to Pacific salmon, steelhead, green sturgeon, rockfish, and eulachon. The proposed research is intended to increase knowledge of species listed under the Endangered Species Act (ESA) and to help guide management and conservation efforts. The applications may be viewed online at: *https://apps.nmfs.noaa.gov/preview/preview_open_for_comment.cfm*.

DATES: Comments or requests for a public hearing on the applications must be received at the appropriate address (see **ADDRESSES**) no later than 5 p.m. Pacific standard time on [*insert date 30 days after date of publication in the* **FEDERAL REGISTER**].

ADDRESSES: Because all West Coast NMFS offices are currently closed, all written comments on the applications should be sent by e-mail to *nmfs.wcr-apps@noaa.gov* (please include the permit number in the subject line of the email).

FOR FURTHER INFORMATION CONTACT: Rob Clapp, Portland, OR (ph.: 503-231-2314, e-mail: *Robert.Clapp@noaa.gov*). Permit application instructions are available from the address above, or online at *https://apps.nmfs.noaa.gov*.

SUPPLEMENTARY INFORMATION:

Species Covered in This Notice

The following listed species are covered in this notice:

Chinook salmon (*Oncorhynchus tshawytscha*): Threatened Lower Columbia River (LCR); threatened Puget Sound (PS); threatened Snake River (SnkR) spring/summer-run (spr/sum); threatened SnkR fall-run; endangered Upper Columbia River (UCR) spring-run; threatened Upper Willamette River (UWR); threatened Central Valley spring-run (CVS); endangered Sacramento River (SacR) winter-run; threatened California Coastal (CC).

Steelhead (*O. mykiss*): Threatened LCR; threatened Middle Columbia River (MCR); threatened PS; threatened SnkR; threatened UCR; threatened UWR; threatened Northern California (NC); threatened Central California Coast (CCC); threatened California Central Valley (CCV); threatened South-Central California Coast (SCCC); endangered Southern California (SC).

Chum salmon (*O. keta*): Threatened Hood Canal Summer-run (HCS), threatened Columbia River (CR).

Coho salmon (*O. kisutch*): Threatened LCR; threatened Oregon Coast (OC) coho; threatened Southern Oregon/Northern California Coast (SONCC), endangered Central California Coast (CCC).

Sockeye salmon (*O. nerka*): Endangered SnkR; threatened Ozette Lake (OL).

Eulachon (*Thaleichthys pacificus*): Threatened southern distinct population segment (SDPS).

Green sturgeon (*Acipenser medirostris*): Threatened SDPS.

Rockfish (*Sebastes spp.*): Endangered Puget Sound/Georgia Basin (PS/GB) Bocaccio (*Sebastes paucispinis*); threatened PS/GB yelloweye rockfish (*S. ruberrimus*).

Authority

Scientific research permits are issued in accordance with section 10(a)(1)(A) of the ESA (16 U.S.C. 1531 *et seq.*) and regulations governing listed fish and wildlife permits (50 CFR 222-226). NMFS issues permits based on findings that such permits: (1) are applied for in good faith; (2) if granted and exercised, would not operate to the disadvantage of the listed species that are the subject of the permit; and (3) are consistent with the purposes and policy of section 2 of the ESA. The authority to take listed species is subject to conditions set forth in the permits.

Anyone requesting a hearing on an application listed in this notice should set out the specific reasons why a hearing on that application would be appropriate (see **ADDRESSES**). Such hearings are held at the discretion of the Assistant Administrator for Fisheries, NMFS.

Applications Received

1127-6M

The Shoshone-Bannock Tribes are seeking to modify a permit that for more than two decades has allowed them to annually take listed SnkR Chinook salmon and steelhead while conducting research designed to (1) monitor adult and juvenile fish in key upper Snake River subbasin watersheds, (2) assess the utility of hatchery Chinook salmon in increasing natural populations in the Salmon River, and (3) evaluate the genetic and ecological impacts hatchery Chinook salmon may have on natural populations. The modification would involve increasing the number of adult spr/sum Chinook the Tribes may observe and handle by permitting them to work at a currently unused weir in the East Fork Salmon River (Idaho). The modification would also involve greatly decreasing the number of juvenile salmon the Tribes capture and sample in the Yankee Fork of the Salmon River. The fish would continue to benefit from the research in two primary ways. First, the research would broadly be used to help guide restoration

and recovery efforts throughout the Snake River basin. Second, the research would be used to analyze how hatchery supplementation can be used as a tool for salmon recovery.

The researchers would use screw traps, weirs, electrofishing, and hook-and-line angling gear to capture the listed fish. Once captured, the fish would undergo various sampling, tagging, and handling regimes, after which they would be allowed to recover and released. Some tissue samples would be taken from adult fish carcasses, and the researchers would conduct some snorkeling surveys and redd counts. In all cases, trained crews would conduct the operations and no adult salmonids would be electrofished. All activities would take place in the Salmon River subbasin. The researchers are not proposing to kill any of the fish they capture, but some may die as an unintended result of the research.

1135-11R

The United States Geological Survey (USGS) is seeking to renew a permit that for more than 20 years has authorized them to take juvenile LCR steelhead in the Wind River subbasin (Washington). The purpose of the study is to provide information on LCR steelhead growth, survival, habitat use, and life histories. This information would improve understanding of habitat associations and life history strategies for LCR steelhead in the Wind River and that, in turn, would help state, tribal, and Federal efforts to restore LCR steelhead. The USGS proposes to capture juvenile LCR steelhead using backpack electrofishing equipment, hold the fish in buckets of aerated water, anesthetize them with MS-222, measure their length and weight, tag age-0 and age-1 fish with passive integrated transponders (PIT-tags), and release all fish at the site of collection after they recover from anesthesia. The researchers do not propose to kill any fish but a small number may die as an unintended result of research activities.

1175-10R

The Gifford Pinchot National Forest (GPNF) is seeking to renew for 5 years a permit that currently allows them to take juvenile LCR Chinook salmon, LCR coho salmon, and LCR and MCR steelhead in the Cowlitz River subbasin (Lewis, Cowlitz, and Washougal Rivers) and middle Columbia-Hood subbasin (Wind, Little White Salmon, and Big White Salmon Rivers) in Washington State. The purpose of this research is to describe fish species presence, distribution, spawning areas, and habitat conditions on lands that the GPNF administers. The GPNF and other agencies would use that information in forest management, habitat restoration, and species recovery efforts. The GPNF proposes to use backpack electrofishing and seines to capture juvenile salmonids, hold them for short periods in buckets of aerated water, identify them, and then release them at the site where they were captured. The researchers do not propose to kill any fish, but a small number may die as an unintended result of research activities.

1339-6R

The Nez Perce Tribe (NPT) under the authority of the Columbia River Intertribal Fish Commission (CRITFC) is seeking to renew for 5 years its permit to annually take adult and juvenile SnkR spr/sum Chinook salmon and SnkR steelhead while conducting research in a number of the tributaries to the Imnaha River (Cow, Lightning, Horse, Big Sheep, Camp, Little Sheep, Freezeout, Grouse, Crazyman, Mahogany, and Gumboot Creeks), the Grande Ronde River (Joseph Creek, Wenaha and Minam rivers), the Clearwater River (South Fork Clearwater River and Lolo Creek), and the Snake River (Lower Granite Dam adult trap). The Imnaha and Grande Ronde Rivers are in northeastern Oregon, the Clearwater River is in Idaho, and the work in the Snake River would take place in Washington. The renewed permit would allow the NPT to continue work they have been conducting for over 2 decades.

The purpose of the research is to acquire information on the status (escapement abundance, genetic structure, life history traits) of juvenile and adult steelhead in the

Imnaha, Grande Ronde, and Clearwater River basins. The research would benefit the listed species by providing status information that fishery managers may use to determine whether recovery actions are helping increase wild Snake River salmonid populations. Baseline information on steelhead populations in the Imnaha, Grande Ronde, and Clearwater River basins would also be used to help guide future management actions. Adult and juvenile salmon and steelhead would be observed, handled, and marked. The researchers would use temporary/portable picket and resistance board weirs and rotary screw traps to capture the fish and would then sample them for biological information (fin tissue and scale samples). They may also mark some of the fish with opercule punches, fin clips, dyes, and PIT, floy, and/or Tyvek disk tags. Adult steelhead carcasses would also be collected and sampled. The researchers do not intend to kill any of the fish being captured, but a small number may die as an unintended result of the activities.

1341-6R

The Shoshone-Bannock Tribes are seeking to renew for 5 years their permit to take SnkR sockeye salmon and SnkR spr/sum Chinook salmon while conducting research designed to estimate their overwinter survival and downstream migration survival and timing. The researchers would also conduct limnological studies on Petit and Alturas Lakes (Idaho) and monitor sockeye rearing. This research—which has been conducted every year since 1996—would continue to provide information on the relative success of the Pettit and Alturas Lakes sockeye salmon reintroduction programs and thereby benefit the listed fish by improving those programs.

Juvenile SR sockeye salmon, spr/sum Chinook salmon, and steelhead would be collected using rotary screw traps and weirs. The fish would be sampled for biological information and released or tagged with passive integrated transponders and released. In addition, to determine trap efficiencies, a portion of the tagged juvenile SnkR sockeye salmon would then be released upstream of the traps, captured at the traps a second time,

and re-released. Adult fish may be trapped as well if any are released above Sawtooth Fish Hatchery (run by the Idaho Department of Fish and Game); these fish would be tissue-sampled and then immediately released above a temporary weir to spawn in Petit Lake. The Tribes do not intend to kill any of the fish being captured, but a small percentage may die as an unintended result of the activities.

1345-10R

The Washington Department of Fish and Wildlife (WDFW) is seeking to renew for 5 years a research permit that currently allows them to take juvenile and adult PS Chinook salmon, LCR Chinook salmon, LCR coho salmon, LCR steelhead, and PS steelhead. The WDFW administers a multitude of water bodies through the state of Washington, and this permit would cover their work throughout Puget Sound and the Lower Columbia River basin. The purpose of the warmwater fish surveys is to assess stocks of inland game fish communities and thereby improve fishery management. The research would benefit salmonids by helping managers write warmwater fish species harvest regulations in a manner that would reduce potential impacts on listed salmonids. The WDFW proposes capturing fish using boat electrofishing, fyke nets, and gillnets. After being captured, the listed salmon and steelhead would be placed in aerated live wells, identified, and immediately released before other species are processed. The researchers would avoid salmonids and do not propose to kill any, but a small number may die as an unintended result of the activities.

1379-8R

The CRITFC is seeking to renew for 5 years a permit that currently allows them to take adult and juvenile UCR steelhead and Chinook while conducting research designed to (1) increase what we know about the status and productivity of various fish populations, (2) collect data on migratory and exploitation (harvest) patterns, and (3) develop baseline information on various population and habitat parameters in order to

guide salmonid restoration strategies. Much of the work in the permit has been conducted for nearly 20 years—first under permit 1134, and then under seven previous versions of 1379. The permit would comprise three studies: Project 1--Juvenile Upriver Bright Fall Chinook Sampling at the Hanford Reach; Project 2--Adult Sockeye Sampling at Tumwater and Wells Dams; and Project 3--Acoustic trawl survey for Lake Wenatchee juvenile sockeye salmon.

The research, as a whole, would benefit listed fish by helping managers set in-river and ocean harvest regimes so that they have minimal impacts on listed salmonid populations. It would also help managers prioritize projects in a way that gives maximum benefit to listed species–including projects designed to help the listed fish recover. The researchers would use beach- and stick seines to capture and tag juvenile fish in the Hanford reach of the Columbia River and capture fish during mid-water trawls in Lake Wenatchee (Washington). Those fish that are not immediately released upon capture would be transported to a holding facility where they would be anesthetized, examined for marks, adipose-clipped, coded wire tagged, allowed to recover, and released. The researchers would also collect, anesthetize, tissue-sample, and tag adult salmonids at Priest Rapids and Wells Dams in Washington State. The CRITFC researchers do not intend to kill any of the fish being captured but a small number may die as an unintended result of the activities.

1386-10R

The Washington Department of Ecology (WDOE) is seeking to renew for 5 years a research permit that currently allows them to take juvenile and adult PS Chinook salmon, UCR spring-run Chinook salmon, SnkR spr/sum Chinook salmon, SnkR fall-run Chinook salmon, LCR Chinook salmon, HCS chum salmon, CR chum salmon, LCR coho salmon, OL sockeye salmon, SnkR sockeye salmon, LCR steelhead, PS steelhead, MCR steelhead, SnkR steelhead, and UCR steelhead. The purpose of the research is to

investigate the occurrence and concentrations of toxic contaminants in non-anadromous freshwater fish tissue, sediment, and water at sites all across Washington. The WDOE conducts this research in order to meet Federal and state regulatory requirements. This research would benefit listed species by identifying toxic contaminants in resident and prey fish and thereby inform pollution control actions. The WDOE proposes to capture fish using various methods including backpack and boat electrofishing, beach seining, block, fyke, and gill netting, and angling. All captured salmon and steelhead would either be released immediately or held temporarily in an aerated live well to help them recover before release. The researchers do not propose to kill any fish but a small number may die as an unintended result of research activities.

1410-13M

The Northwest Fisheries Science Center (NWFSC) is seeking to modify a research permit that currently allows them to take juvenile and adult CVS, LCR, PS, SacR winter-run, SnkR fall-run, SnkR spr/sum, UCR, and UWR Chinook salmon; CR chum salmon; LCR, OC, and SONCC coho salmon; SnkR sockeye salmon; and LCR, MCR, SnkR basin, UCR, and UWR steelhead while conducting a study of the Columbia River plume and the surrounding ocean environment off the coasts of Oregon and Washington. The NWFSC research may also cause them to take SDPS eulachon, a species for which there are currently no ESA take prohibitions. The modification would largely entail increasing take for some species (*e.g.,* juvenile SnkR spr/sum Chinook salmon) and decreasing take for other species (e.g., SnkR Fall Chinook salmon). The purposes of the research are to (1) determine the abundance, distribution, growth, and condition of juvenile Columbia River salmonids in the river's plume and characterize its physical and biological features as they relate to salmonid survival; (2) determine the impact that predators and food supply have on survival among juvenile Columbia River Chinook and coho salmon as they migrate through the Columbia River estuary and

plume; and (3) synthesize the early ocean ecology of juvenile Columbia River salmonids, test mechanisms that control salmonid growth and survival, and produce ecological indices that forecast salmonid survival.

The research would benefit the affected species by (1) providing data to improve understanding of how the ocean and Columbia River plume conditions affect juvenile salmonids, (2) helping predict how changing ocean conditions would affect salmonid growth and survival, and (3) helping improve salmon management actions in relation to river, plume, and ocean conditions. This study would work in conjunction with another NWFSC study (permit 22369-2M) by capturing salmonids using a different capture method at deeper locations. The NWFSC proposes to capture fish using a surface trawl, which can cause lethal crushing and descaling injuries to juvenile salmonids and eulachon. Juvenile salmonids would be identified to species, measured for length, and frozen for further analysis (*i.e.* weight, growth, genetics, diet (stomach contents), parasites, pathogens, and physiological condition). Adult salmonids would be held in an aerated livewell, identified to species, measured for length, checked for tags and marks, and released. Eulachon would either be returned to the capture location or retained for further scientific research activities at the NWFSC. The researchers do not intend to kill any listed adult salmonids, but some may die as an inadvertent result of the research.

1465-5R

The Idaho Department of Environmental Quality (IDEQ) is seeking to renew for five years a research permit that currently allows them to take juvenile threatened SnkR steelhead, threatened SnkR fall Chinook salmon, threatened SnkR spr/sum Chinook salmon, and endangered SnkR sockeye salmon during the course of two research projects designed to ascertain the condition of many Idaho streams. The purposes of the research are to (a) determine whether aquatic life is being properly supported in Idaho's rivers, streams, and lakes, and (b) assess the overall condition of Idaho's surface waters. The

fish would benefit from the research because the data it produces would be used to inform decisions about how and where to protect and improve water quality in the state. The researchers would use backpack- and boat electrofishing equipment to capture the fish. They would then be weighed and measured (some may be anesthetized to limit stress) and released. The IDEQ does not intend to kill any of the fish being captured, but a small percentage may die as an unintended result of the research activities.

1564-6R

The University of Washington (UW) is seeking to renew for 5 years a permit that currently allows them to annually take juvenile natural- and hatchery-origin PS Chinook and steelhead while conducting research designed to monitor the success of habitat restoration projects in the Duwamish River estuary. The goal of these projects is to understand changes in population characteristics among Chinook salmon in response to restoration actions. The habitat restoration work is conducted in association with several entities including King County, the City of Seattle, Long Live the Kings, and Vigor Shipyards. The researchers propose to capture fish using enclosure nets and beach seines. Juvenile salmon and steelhead would be handled (anesthetized, weighed, measured, and checked for marks or tags), and released. Juvenile steelhead and a subsample of Chinook salmon captured may have their stomach contents non-lethally sampled via gastric lavage. The UW researchers do not propose to kill any listed animals as part of this project, but a small number may die as an unintended result of the research activities.

1586-5R

The NWFSC is seeking to renew for 5 years a permit that currently allows them to annually take juvenile, subadult, and adult PS Chinook salmon, and juvenile PS steelhead, HCS chum salmon, and Bocaccio and yelloweye rockfish. The purpose of the work is to characterize how wild juvenile PS Chinook salmon and various forage fish species use nearshore habitats in the oceanographic basins of the Puget Sound, the Straits

of Juan de Fuca, and the San Juan Islands in Washington State. The permit would also allow the researchers to take adult SDPS eulachon, a species for which there are currently no take prohibitions. The goals of this project are to help managers develop protection and restoration strategies and monitor the effects of recovery actions. To accomplish this, the proposed work would help researchers (a) determine if nearshore populations are increasing or decreasing; and (b) establish baseline abundance, composition, and genetic structure metrics for nearshore populations throughout the Puget Sound. The researchers propose to capture fish using beach seines, Nordic surface trawls, and hook-and-line sampling. Juvenile salmon and steelhead would be handled (weighed, measured, and checked for marks or tags), and released. A subset of juvenile Chinook salmon would have fin clip samples collected. Adult Chinook salmon may have fin clip or scale samples collected. Captured rockfish, eulachon, and steelhead would be handled and released. A small subset of juvenile Chinook salmon would be lethally sacrificed for contaminant, otolith, and stomach content analyses. Any fish found dead at the time of capture or unintentionally killed during sampling would be used in place of fish that would otherwise be intentionally sacrificed. Aside from the subset to be lethally sampled, the NWFSC does not propose to kill any fish being captured as part of this project—though a small number may die as an unintended result of the research activities.

1587-7R

The USGS's Western Fisheries Research Center is seeking to renew for 5 years a permit that currently allows them to annually take juvenile PS Chinook salmon, juvenile PS steelhead, and juvenile HCS chum salmon while conducting two research projects designed to explore the influence of large river deltas on nearshore ecosystem processes and the impacts urbanization has on such processes in the Puget Sound, Washington. The permit would also allow the researchers to take adult SDPS eulachon, a species for which there are currently no take prohibitions. The goals of this work are to understand physio-

chemical processes related to nearshore habitat changes that alter trophic webs, community dynamics, and forage fish populations. This information, in turn, would benefit listed fish by helping managers better grasp the processes and considerations critical to understanding (and thereby mitigating) human impacts on nearshore salmonid habitats.

The researchers propose to capture fish using lampara seines, dip nets, beach seines, gill nets, and hook-and-line sampling, and would only target forage fish species (*i.e.,* sand lance, surf smelt, and Pacific herring). Though this study does not target ESA-listed species, some may be unintentionally captured as part of this work. Any such fish would be handled (weighed, measured, and checked for marks or tags) and released near their capture location. The USGS does not propose to kill any listed fish, but a small number may die as an unintended result of the research activities.

1598-5R

The Washington State Department of Transportation (WSDOT) is seeking to renew for 5 years a research permit that currently allows them to take juvenile PS Chinook salmon, UCR spring-run Chinook salmon, SnkR spr/sum Chinook salmon, SnkR fall-run Chinook salmon, LCR Chinook salmon, HCS chum salmon, CR chum salmon, LCR coho salmon, OL sockeye salmon, SnkR sockeye salmon, LCR steelhead, PS steelhead, MCR steelhead, SnkR steelhead, and UCR steelhead. The WSDOT research may also cause them to take SDPS eulachon, a species for which there are currently no ESA take prohibitions. Sample sites would be located throughout the state of Washington. The purpose of the study is to determine the distribution and diversity of anadromous fish species in waterbodies crossed by or adjacent to the state transportation systems (highways, railroads, airports, etc.).

This information would be used to assess what impacts projects proposed at those facilities may have on listed species. The research would benefit the listed species by

helping WSDOT minimize project impacts on listed fish to the greatest extent possible. Depending on the size of the stream system, the WSDOT proposes to capture fish using dip nets, stick seines, baited minnow traps, or backpack electrofishing. The captured fish would be identified to species and immediately released. The researchers do not propose to kill any listed fish being captured, but a small number may die as an unintended result of the activities.

10093-3R

The California Department of Fish and Wildlife (CDFW) is seeking to renew a 5 year permit to annually take adult and juvenile CC Chinook; CCC and SONCC coho; and NC, SCCC, SC and CCC steelhead in watersheds throughout coastal California. The project goal is to restore salmon and steelhead productivity in coastal California streams through a comprehensive restoration program. The specific goals of this research project are to assess fish abundance and distribution in various streams slated for restoration work. This research would benefit listed species by providing data to help managers assess and direct habitat restoration projects across much of the salmonid-bearing waters of California. Fish would be captured by backpack electrofishing, beach seines, minnow traps, and weirs; they would also be observed during snorkel and spawning ground surveys. Some captured fish would be anesthetized, measured, weighed, tagged, and tissue-sampled for genetic information. The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the proposed activities.

13381-4R

The NWFSC is seeking to renew for 5 years a permit that currently allows them to annually take natural juvenile SnkR spr/sum Chinook and SnkR steelhead in various places in the Salmon River drainage in Idaho and at Little Goose and Lower Granite Dams on the lower Snake River. The purpose of the research is to continue monitoring parr-to-smolt survival and outmigration behavior among wild SnkR spr/sum Chinook

salmon populations from Idaho. Steelhead juveniles that are inadvertently collected would also be tagged to help supplement an ongoing Idaho Department of Fish and Game study.

The research would benefit the fish by continuing to supply managers with the information they need to budget water releases at hydropower facilities in ways designed to help protect migrating juvenile salmonids. The information gained would also be used to build long-term data sets on parr-to-smolt migration behavior and survival rates. This information, coupled with water quality, weather, and climate data, is intended to provide a foundation for understanding these populations' life histories—the knowledge of which is critical to planning effective recovery actions. The listed fish would be captured (using seines, dip nets, and electrofishing), anesthetized, tagged, and released. A portion of these fish would also be re-captured at a smolt bypass facility, anesthetized, weighed, measured, and released. The researchers do not intend to kill any of the fish being captured, but a small percentage may die as an unintended result of the research activities.

13382-4R

The NWFSC is seeking to renew for 5 years a permit that currently allows them to annually take juvenile threatened SnkR spr/sum Chinook salmon and juvenile threatened SnkR steelhead at various places in the Snake River in Idaho and in various streams of Southeast Washington and Northeast Oregon. Most of the activities under this permit have been under way for nearly 20 years—first under Permit 1406 and then under previous versions of Permit 13382. Under the permit, the listed fish would be variously captured (using seines, dip nets, traps, and electrofishing), anesthetized, tissue sampled, weighed, measured, and released. In addition, a small number of juvenile fish would be caught using electrofishing methods, anesthetized, and then held in aerated containers of water with varying temperature regimes to measure their cardiac performance. The fish

would then in all cases be allowed to recover and returned live to the place of their capture.

The purposes of the research are therefore (1) to continue monitoring the effects of supplementation among steelhead and spr/sum Chinook salmon populations in Idaho, and (2) measure cardiac performance in juvenile salmonids. The research would benefit the fish by generating baseline information on elevated temperature effects and continuing to supply managers with the information they need when seeking to use hatchery programs to conserve listed species. The researchers do not intend to kill any of the fish being captured, but some may die as an unintended result of the process.

14419-4R

The Sonoma County Water Agency is seeking to renew a 5 year permit to annually take adult and juvenile CC Chinook, CCC coho and CCC steelhead in the Russian River watershed, California. The project's goal is to detect and depict trends in ESA-listed salmonid populations in the Russian River watershed and to monitor the results of salmonid habitat enhancement efforts. This research would benefit listed species by providing life cycle and habitat-specific estimates of residence time, growth, and survival so that resource management agencies can better identify and prioritize key restoration actions in the Russian River watershed.

Fish would be captured by downstream-migrant trapping (rotary screw traps, fyke nets, and pipe/funnel nets), electrofishing (backpack and boat), otter trawl, hook-and-line sampling, and beach seining. Fish would also be observed during snorkel and spawning surveys. Some fish would be anesthetized, measured, weighed, tagged, scale-sampled, and/or tissue-sampled for genetic information. The stomach contents of a small subset of fish would be sampled using non-lethal gastric lavage. A maximum of 130 juvenile steelhead and 150 juvenile Chinook would be sacrificed for otolith microchemistry analysis. Beyond these subsets, the researchers do not intend to kill any listed fish, and

any that are inadvertently killed would be used in place of the animals that would otherwise be sacrificed.

15542-6R

TRPA Fish Biologists is seeking to renew a 5 year research permit to annually take juvenile and adult CCV steelhead in Lower Putah Creek in the lower Sacramento River basin, California. The project's goal is to monitor the distribution and relative abundance of fish populations in lower Putah Creek downstream from the Putah Diversion Dam. This research would benefit listed steelhead by providing information on fish response to river flows, and generating baseline information on the distribution and diversity of rainbow trout/steelhead in Putah Creek. Fish would be captured by backpack and boat electrofishing. Captured fish would be identified by species, measured, weighed, allowed to recover, and released. The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the research activities.

15548-2R

TRPA Fish Biologists is seeking to renew a 5 year research permit to annually take adult and juvenile CCC steelhead in Suisun Creek, Green Valley Creek, and Ledgewood Creek in Solano and Napa Counties, California. The project's goal is to monitor fish distribution, population structure, relative abundance, condition, and general health. The research would benefit CCC steelhead by producing data that would be used to help develop the Solano Habitat Conservation Plan in as fish-friendly a manner as possible. Listed fish would be captured by backpack and boat electrofishing; they would then be identified by species, measured, weighed, allowed to recover, and released. The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the research activities.

15848-3R

The WDFW is seeking to renew for 5 years a permit that currently allows them to annually take juvenile and adult PS Chinook salmon, PS steelhead, HCS chum salmon, Bocaccio, and yelloweye rockfish, and adult SDPS green sturgeon while conducting research to estimate the relative numerical and biomass abundance of bottom fish in the basins of Puget Sound, Washington. They would also collect other distributional and biological information for key marine resources. The researchers may also capture adult and juvenile SDPS eulachon, a species for which there are currently no take prohibition. The goals of this work are to develop a fishery-independent method for tracking population trends over time and provide managers and stakeholders with information about ecosystem productivity, community structure, and trends. This information would benefit listed species by informing an array of future management decisions.

The researchers would use bottom trawls to capture fish and would not target listed species, but they may unintentionally encounter some during the course of the work. All listed animals that may be captured would be handled (weighed, measured, and checked for marks or tags) and released near their capture location. The WDFW does not propose to kill any listed fish as part of this project, but a small number may die as an unintended result of the proposed activities.

15890-3R

The WDFW is seeking to renew for 5 years a permit that currently allows them to annually take juvenile and adult PS Chinook salmon, PS steelhead, HCS chum salmon, Bocaccio, and yelloweye rockfish while conducting research to estimate the abundance of pelagic forage fish species in key areas of the Puget Sound, Washington. The researchers would also encounter SDPS eulachon, a species for which there are currently no take prohibitions. The goals of this work are to compare pelagic species stock abundances over time and gather growth, mortality, and recruitment information about the

populations. This information would benefit listed species by informing an array of future fishery management decisions.

The researchers propose to capture fish using midwater trawls and, while they would not target listed species, some may be captured during the course of the work. Any ESA-listed salmon, steelhead, or rockfish captured would be handled (weighed, measured, and checked for marks or tags), tissue-sampled (scale or fin clip), and released near their capture location. Any SDPS eulachon captured would be handled and released. The WDFW does not propose to kill any listed fish as part of this project, but a small number may die as an unintended result of the research activities.

16021-3R

The WDFW is seeking to renew for 5 years a permit that currently allows them to annually take juvenile and adult PS Chinook salmon, Bocaccio, and yelloweye rockfish, and SDPS green sturgeon while conducting research to study the stock structure, biology, food web relationships, and abundance of groundfish species in inland marine waters of Puget Sound, Washington. The researchers may also capture adult SDPS eulachon, a species for which there are currently no take prohibitions. The goal of this work is to improve understanding of groundfish stock structure, life history, biology, geographic distribution, habitat use, and food web relationships. The researchers propose to capture fish using hook-and-line angling and live-capture traps and, though they are not targeting ESA-listed species, they may inadvertently capture some. In addition, the researchers propose to use modified dinglebar trolling gear, although it will only be deployed in habitats where they do not anticipate encountering ESA-listed species. All captured rockfish would be handled (weighed, measured, and checked for marks or tags), sampled for stomach contents, tissue-sampled, floy-tagged, and released near the site of their capture. Any ESA-listed salmon, eulachon, or green sturgeon captured would be handled and swiftly released. The WDFW does not propose to kill any ESA-listed species as part

of this project, but a small number may die as an unintended result of the proposed activities.

16069-4R

The City of Portland is seeking to renew for 5 years a research permit that currently allows them to take juvenile UCR spring-run Chinook salmon, UWR Chinook salmon, SnkR spr/sum Chinook salmon, SnkR fall-run Chinook salmon, LCR Chinook salmon, CR chum salmon, LCR coho salmon, SnkR sockeye salmon, LCR steelhead, UWR steelhead, MCR steelhead, SnkR steelhead, and SDPS green sturgeon in the Columbia and Willamette rivers and some of their tributaries in Oregon. The researchers may also take some adult SDPS eulachon (a species for which there are currently no ESA take prohibitions). This research is part of the Portland Watershed Management Plan—a series of projects designed to improve watershed health in the Portland area. Project staff would annually sample 37 sites across all Portland watersheds and record data on local hydrology, habitat, water chemistry, and biological communities.

The research would benefit listed salmonids by providing information to help managers assess watershed health, critical habitat status, effectiveness of watershed restoration actions, and compliance with regulatory requirements. The City of Portland proposes to capture juvenile fish using backpack and boat electrofishing equipment, hold them in a bucket of aerated water, take caudal fin clips for genetic analysis, and release them. The researchers would avoid contact with adult fish. The researchers do not propose to kill any fish but a small number may die as an unintended result of the proposed activities.

16091-3R

The WDFW is seeking to renew for 5 years a permit that currently allows them to annually take juvenile and adult PS Chinook salmon, PS steelhead, Bocaccio, yelloweye rockfish, and adult SDPS green sturgeon while monitoring English sole (*Parophrys*

vetulus) for (1) chemical contaminant levels in fish tissues, (2) pathological disorder frequency, and (3) other biomarkers signifying biological effects in in the Puget Sound, Washington. The researchers may also capture SDPS eulachon, a species for which there are currently no take prohibitions. The goal of this work is to monitor contaminants in this indicator benthic fish to better understand toxic contaminant impacts on the benthic food web, measure changes in toxic contaminant levels at a local level, and prioritize cleanup efforts in the Puget Sound. This information would benefit listed fish by helping managers make informed decisions regarding habitat restoration efforts throughout the Puget Sound. The researchers propose to capture fish using bottom trawls and, though they are not targeting listed species, they may capture some as part of this work. Any viable ESA-listed species captured would be handled, allowed to recover, and quickly released. The WDFW does not propose to kill any listed fish, but a small number may die as an unintended result of the research activities.

16318-4R

Hagar Environmental Services is seeking to renew for 5 years a permit that currently allows them to annually take juvenile CCC coho and juvenile CCC and SCCC steelhead in Santa Cruz, Monterey, and San Luis Obispo counties, California. The purpose of this study is to gather data on salmonid abundance and distribution and quantify various habitat parameters with the goal of improving watershed management across three counties. This research would benefit listed species by helping managers draft a fish-friendly habitat conservation plan for the City of Santa Cruz and, in general, better inform land management decisions throughout the area. Fish would be captured by backpack electrofishing and beach seines and observed during snorkel surveys. Some fish would be anesthetized, measured, weighed, tagged, and scale- and tissue-sampled for genetic information. The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the research activities.

16521-3R

The WDFW is seeking a to renew for 5 years their permit to annually capture, handle, and release juvenile UCR steelhead and Chinook salmon in the Hanford reach of the Columbia River and near the Tri-Cities, Washington. The purpose of the research is to gather data on fall Chinook abundance, length frequency distribution, and fish losses in the area. The information collected from these surveys is used to evaluate protections for juvenile fall Chinook under the Hanford Reach Fall Chinook Protection Program Agreement; it has also been used to gauge the efficacy of the coded-wire-tagging program for marking wild up-river bright fall Chinook in the Hanford Reach. These surveys provide biologists and managers with definitive data on fish presence and the impacts both listed and non-listed Chinook and steelhead experience when residing in near-shore habitats in this area of the Columbia River. These data have been (and would continue to be) used to help guide management actions for the benefit of the listed species. The researchers would use beach seines and backpack electrofishing equipment to capture the fish. The captured fish would be anesthetized, measured, allowed to recover, and released back to the river. The researchers do not expect to kill any listed fish, but a small number may die as an unintended result of the research activities.

16702-4R

The NWFSC is seeking to renew for 5 years a permit that currently allows them to annually take juvenile PS Chinook salmon and steelhead and adult SDPS eulachon (a species for which there are currently no take prohibitions) while conducting research designed to characterize how wild juvenile PS Chinook salmon use habitats in the Snohomish River estuary and delta in the Puget Sound, Washington. The goal of this project is to identify the life history types of juvenile PS Chinook salmon present, characterize their spatial and temporal distribution, and assess their feeding ecology and interactions with other biota. The gathered data would benefit listed fish by better

informing Snohomish-area land management decisions as conditions and opportunities change.

The researchers propose to capture fish using beach seines and fyke nets. Juvenile salmon and steelhead would be handled (weighed, measured, and checked for marks or tags), and released. A small subset of hatchery- and naturally-produced juvenile Chinook salmon would be lethally sacrificed for stable isotope, otolith, and stomach contents analysis. Any fish found dead at the time of capture or unintentionally killed during sampling would be used in place of fish that would otherwise be intentionally sacrificed. Aside from this subset, the NWFSC does not propose to kill any other fish being captured as part of this project, but a small number may die as an unintended result of the research activities.

17292-3R

NMFS's Southwest Fisheries Science Center (SWFSC) is seeking to renew a 5 year research permit to annually take adult and juvenile CC Chinook, CCC and SONCC coho, and NC, SCCC, SC and CCC steelhead. Sampling would be conducted in California on a variety of coastal salmonid populations. The purposes of this research are to: (1) estimate population abundance and dynamics; (2) evaluate factors affecting growth, survival, reproduction, and other life history patterns; (3) assess life-stage specific habitat use and movement; (4) evaluate physiological performance and tolerance; (5) determine the genetic structure of populations; (6) evaluate the effects of water management and habitat restoration; and (7) develop improved sampling and monitoring methods. The research would benefit the coastal California salmon stocks by providing critical information to support their conservation, management, and recovery.

The listed fish would be captured using backpack electrofishing, hook-and-line sampling, hand- and dipnets, beach seines, fyke nets, panel, pipe or rotary screw traps, and weirs. They would also be observed during spawning ground and snorkel surveys.

Some fish would be anesthetized, measured, weighed, tagged (coded wire, elastomer, radio, acoustic, PIT, or sonic), and tissue-sampled for genetic information. A small number of juvenile fish would be sacrificed to support laboratory experiments and assess mercury levels and RNA expression, but otherwise the researchers do not intend to kill any of the captured fish—though some may die as an inadvertent result of the activities.

17299-4R

The SWFSC is seeking to renew a 5 year research permit to annually take adult and juvenile CCV steelhead, SacR winter-run and CVS Chinook salmon, and SDPS green sturgeon while conducting research activities in the California Central Valley. The overall goal of this project is to provide critical information to support California salmonid stock conservation and management. The SWFSC would conduct comparative studies on salmon ecology across all Central Valley habitats (streams, rivers, and delta) to increase our knowledge of California's Chinook salmon and steelhead life histories. The proposed action would include six study efforts: (1) producing telemetry data to assess river habitat use, behavior, and survival; (2) estimating predator impacts on salmon; (3) making physiological measurements of aerobic scope across stocks; (4) examining otoliths to identify stocks of salmonids and thereby inform Central Valley project operations and Bay-Delta monitoring; (5) annually updating strontium and sulfur isoscape validation tools for reconstructing juvenile habitat use; and (6) applying isotope methods to reconstruct salmon habitat use and growth studies. The research would benefit the affected species by providing critical information to inform life-cycle modeling efforts at the SWFSC and help guide NMFS's West Coast Region and various Central Valley agencies in their resource management efforts. In addition, results would also be integrated into the Central Valley Project Improvement Act and thereby help prioritize habitat restoration actions.

In situations where the SWFSC are unable to rely on collaborators to capture fish, collection methods would include rotary screw traps, fyke nets, backpack- and boat electrofishing, beach seining, tangle netting, DIDSON (sonar) observations, hook-and-line sampling, and spawning ground and snorkel surveys. Some fish would be anesthetized, measured, weighed, tagged (coded wire, elastomer, radio, acoustic, PIT, or sonic), and tissue sampled (fin clip, scales, stomach lavage). Another subset would be tested in the laboratory to measure aerobic scope under a range of temperature and flow combinations. Most of the fish to be captured would experience no long-term adverse effects, however, a number of hatchery fish that have had their adipose fins removed would be sacrificed to collect otoliths for age/growth analysis, organ tissues for isotope, biochemical and genomic expression assays and parasite infections, and to assess tag effects/retention. It should be noted that there are no take prohibitions for such fish and they are by definition considered excess to the species' recovery needs.

17306-3R

The Oregon Department of Fish and Wildlife (ODFW) is seeking to renew for 5 years a permit that currently authorizes them to capture threatened MCR steelhead (adults and juveniles) in the upper Deschutes River, Oregon. The various proposed activities would include adult and juvenile snorkel surveys throughout the basin, screw trapping, backpack and boat electrofishing and mark/recapture studies, hook and line surveys, telemetry, seining, spawning ground surveys using weirs and redd counts, monitoring habitat restoration projects, and setting traps and nets in reservoirs for population monitoring. Most captured fish would be identified, measured and released, though some would also be tissue sampled and/or floy- or PIT-tagged. Data collected from this work would be used to inform management decisions in the Deschutes River watershed for the benefit of MCR steelhead. Biologists from the ODFW have been conducting this work in

the area for decades. The researchers do not intend to kill any of the fish being captured, but a small percentage may be killed as an inadvertent result of the activities.

17916-2R

The Bureau of Land Management (BLM), Arcata Field Office, is seeking to renew a 5 year research permit to annually take adult and juvenile CC Chinook salmon, SONCC coho salmon, and NC steelhead in watersheds throughout Northwest California—including the Mattole River, Eel River, the Lost Coast region tributaries to the Pacific Ocean, and some Humboldt Bay tributaries. The purpose of this research is to monitor how current management actions under the Northwest Forest Plan's Aquatic Conservation Strategy are affecting anadromous salmonids and their habitats. In order to monitor land management actions and implement the Northwest Forest Plan in northern California, the BLM needs to obtain updated information on fish distribution and habitat. Thus, the information to be gathered would benefit listed species by informing adaptive management strategies intended to aid salmon recovery.

Fish would be captured using backpack electrofishing, hand/or dip nets, beach seines and observed during spawning and snorkel surveys. Some fish would be anesthetized, measured, and weighed. The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the research activities.

18012-3R

The CDFW Bay Delta Region's Central Coast Watershed Restoration and Fisheries Management Program is seeking to renew a 5 year research permit to annually take adult and juvenile CC Chinook salmon, CCC coho salmon, and NC, CCC and SCCC steelhead in Sonoma, Mendocino, Napa, Marin, San Mateo, Santa Cruz and Monterey Counties, California. The purpose of this research is to assess salmonid stock status throughout the seven counties and identify factors that may be limiting population growth and recovery. The proposed studies are: (1) juvenile salmonid occurrence, distribution

and habitat monitoring; (2) adult salmonid occurrence, passage, and distribution; (3) spawning ground surveys; (4) life cycle station monitoring; and (5) juvenile steelhead lagoon seining and habitat monitoring. This research would benefit listed species by informing proposed habitat restoration project designs, helping prioritize watershed restoration efforts, and helping managers mitigate the negative impacts of various management actions.

Fish would be captured via backpack electrofishing, beach seining, rotary screw trapping, fyke/pipe trapping, and weirs. They would also be observed during spawning and snorkel surveys and at electronic counting stations (by DIDSON (sonar) array, Vaki Riverwatcher, and video weirs). Most juvenile fish would be handled, measured for fork length, weighed, and released. Various subsets of the captured juvenile fish would be anesthetized, tissue-sampled (fin clip) for genetic analysis, scale sampled, marked with an upper caudal fin clip, and/or PIT-tagged. Captured adult salmon would be handled (identified, measured, weighed, and scale- and tissue-sampled), tagged (bi-colored Floy tags and/or opercule-punched), and released. The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the research activities.

19820-3R

The University of California, Davis (UC Davis) Biogeochemistry & Fish Ecology Lab is seeking to renew a 5 year research permit to annually take juvenile SacR winter-run and CVS Chinook, juvenile and adult CCC and CCV steelhead, and juvenile SDPS green sturgeon in the San Francisco Bay Area and tributaries. The purpose of this research is to determine the degree to which Longfin Smelt use tributaries of San Pablo and San Francisco bays as spawning and rearing habitat. This information would improve the understanding of how bay tributaries contribute to the overall population of Longfin

Smelt and that information, in turn, would benefit listed salmonids by improving our understanding of tributary habitat health in areas not previously monitored.

Although this study principally targets longfin smelt, SacR winter-run and CVS Chinook, CCC and CCV steelhead and SDPS green sturgeon may be encountered during sampling. Fish would be captured with beach seines, fyke nets, and trawls (otter and Kodiak). Captured fish would be identified by species, enumerated, and released. A sub-sample of 30 individuals per species would be measured. The researchers do not propose to kill any fish but a small number may die as an unintended result of research activities.

20104-3R

The Pacific Shellfish Institute is seeking to renew for 5 years a permit that currently allows them to annually take juvenile PS Chinook salmon, PS steelhead, and SDPS green sturgeon in eelgrass and mudflat habitats in Samish Bay in the Puget Sound and in Willapa Bay on the coast of Washington. The researchers may also capture SDPS eulachon, a species for which there are currently no take prohibitions. The researchers are also requesting to expand their work to include sites in Hood Canal, South Puget Sound, and Grays Harbor, Washington; Coos Bay, Oregon; and Humboldt Bay, California. They would also seek to also take juvenile HCS chum salmon, OC coho salmon, SONCC coho salmon, CC Chinook salmon, and NC steelhead. The research is designed to quantify the effects shellfish culture and burrowing shrimp have on seagrass and its function as habitat for fish and invertebrates. The researchers would examine the spatial relationships between existing shellfish culture, burrowing shrimp, and seagrass in several Pacific Northwest estuaries. They would also synthesize data and parameterize production functions for higher trophic level species of interest across habitat types. The goal of this project is to help develop a landscape-scale understanding of the influence aquaculture has on estuarine habitats and thereby help managers develop environmentally and

economically sustainable shellfish farming practices that would also help conserve listed salmonids and other fish.

The researchers propose to capture fish using beach seines, open-ended fyke nets with cameras, and Breder traps. Captured fish would be handled (weighed, measured, and checked for marks or tags), and released. A small subset of fish from all species captured may also be lethally sacrificed for stable isotope and stomach contents analyses. Any fish found dead at the time of capture or unintentionally killed during sampling would be used in place of fish that would otherwise be intentionally sacrificed. In addition to those intentionally sacrificed, a small number of listed juvenile fish may die as an unintended result of the research activities.

20492-3R

The ODFW is seeking to renew a permit a permit that currently authorizes research in lake, river, backwater, slough, and estuary habitats in the Willamette and Columbia basins (Oregon) and on the Oregon coast. The permit would continue to allow the ODFW to take juvenile CR Chum, LCR Columbia Chinook, UCR Chinook, SnkR spr/sum Chinook, SnkR fall Chinook, UWR Chinook, LCR Coho, LCR Steelhead, MCR Steelhead, UCR Steelhead, SnkR Steelhead, UWR Willamette Steelhead, SnkR Sockeye Salmon, OC Coho, and adult SDPS green sturgeon. The permit would also allow ODFW to take adult SDPS eulachon—a species for which there are currently no take prohibitions. The information to be collected would be used to monitor population structure and abundance for many species across the landscape. This, in turn, would be used to improve a suite of listed-fish-affecting management actions throughout much of Oregon.

The permit would cover the following projects: (1) Warmwater and Recreational Game Fish Management, (2) District Fish Population Sampling in the Upper Willamette Basin, and (3) Salmonid Assessment and Monitoring in the Deschutes River. The

researchers propose to use boat electrofishing to sample fish. Most juveniles and all adults would be allowed to swim away without being handled after they are electroshocked, but some juveniles would be netted, identified, and released immediately. A subset of captured juveniles would be anesthetized, weighed and measured, allowed to recover, and then released. All ESA-listed fish would be processed and released before any non-listed fish are processed. The ODFW does not intend to kill any of the fish being captured, but a small number may die as an unintended result of the activities.

21185-2R

The Wild Fish Conservancy (WFC) is seeking to renew for 5 years a permit that currently allows them to annually take juvenile PS Chinook salmon and steelhead while conducting research to validate and correct existing Washington Department of Natural Resources channel water-type classifications regarding tributaries to the Puget Sound and the Deschutes River (Washington). The goal of this work is to generate data that can be used to identify wild fish habitat restoration opportunities and thereby (a) improve regulatory protection of sensitive aquatic habitats for ESA-listed Chinook salmon and steelhead, and (b) help land use planners implement better recovery strategies. The researchers propose to capture fish using backpack electrofishing. Any juvenile PS steelhead captured would be handled (weighed, measured, and checked for marks or tags), tissue-sampled (fin clip or opercule punch), and released. Juvenile PS Chinook salmon captured would be handled and released. The WFC does not propose to kill any listed fish as part of this project, but a small number may die as an unintended result of the research activities.

21220-2R

The Battelle Memorial National Ecological Observatory Network (NEON) Program is seeking to renew for 5 years a permit that currently authorizes them to capture adult and juvenile threatened LCR steelhead in Martha Creek, Washington while

conducting research designed to monitor climate change, land use alterations, and invasive species distribution. The NEON researchers would continue to use instream and riparian sensors in combination with field sampling to characterize chemical, physical, and biological properties of the stream and riparian ecosystem. The aquatic sampling suite would consist of chemical measurements of surface and shallow ground water, physical measurements of stream and riparian habitat, and biological measurements of the aquatic community (biofilms, macrophytes, algae, invertebrates, and fish).

During times when no LCR steelhead adults or redds are present, NEON would survey fish using three-pass backpack electrofishing with block nets placed at the upper and lower boundaries of each survey reach. The captured fish would be held in buckets of cool stream water, anesthetized with a eugenol solution, identified, photographed, measured, allowed to recover, and then released back to the stream. If any adult steelhead are encountered during electrofishing, NEON would immediately turn off the electrofishing unit, let the fish swim away, and halt surveys until the researchers determine through consultation with NMFS and the Gifford Pinchot National Forest that listed adults or redds are no longer present in the research area. Although NEON's standardized fish survey protocols describe tissue sampling and vouchering fish specimens, NEON does not propose to tissue-sample or intentionally kill any *O. mykiss* at the Martha Creek research site. However, a small number of juvenile LCR steelhead may die as an unintended consequence of the activities.

21330-4R

The U.S. Fish and Wildlife Service (USFWS) is seeking to renew for 5 years a permit that currently allows them to annually take juvenile and adult PS Chinook salmon and steelhead while conducting research to document fish presence and abundance in Jim Creek in Snohomish County, Washington. The goal of this work is to provide data regarding fish distribution and abundance in Jim Creek to help the U.S. Navy refine their

Integrated Natural Resources Management plan for Naval Radio Station Jim Creek. The Navy would then use this information to design and carry out habitat restoration for the benefit of the listed fish.

The researchers propose to capture fish using backpack electrofishing; they would also conduct snorkel and spawning surveys. Any juvenile PS Chinook salmon or steelhead captured would be handled (weighed, measured, and checked for marks or tags) and released. Some juvenile steelhead may also be tissue-sampled (fin clip or opercule punch). The USFWS does not propose to kill any listed fish, but a small number may die as an unintended result of the research activities.

22369-2M

The NWFSC is seeking to modify a permit that currently allows them to annually take juvenile and adult PS Chinook salmon, PS steelhead, HCS chum salmon, OL sockeye salmon, SnkR fall-run Chinook salmon, SnkR spr/sum Chinook salmon, SnkR sockeye salmon, SnkR steelhead, UCR spring-run Chinook salmon, UCR steelhead, UWR Chinook salmon, MCR steelhead, LCR Chinook salmon, LCR coho salmon, LCR steelhead, CR chum salmon, OC coho salmon, SONCC coho salmon, CC Chinook salmon, SacR winter-run Chinook salmon, CV spring-run Chinook salmon, and SDPS green sturgeon. The researchers may also capture SDPS eulachon, a species for which there are currently no take prohibitions. The research involves using pop-up satellite tags and acoustic tags to identify the ocean distribution of salmonids off the coast of Washington and mouth of the Columbia River. The researchers wish to modify their permit by increasing the amount of take allowed for some of the species they may encounter.

The primary goal of this project is to investigate nearshore behavior, distribution, and migration patterns, diet, growth rates, and habitat use among Chinook salmon, coho salmon, and steelhead. The researchers would also use tissue samples to determine the

captured fishes' genetic origins. The researchers propose to capture fish using hook-and-line angling. Coho, chum, and sockeye salmon, as well as eulachon and green sturgeon, would be handled (weighed, measured, and checked for marks or tags), and released. Chinook and steelhead would be anesthetized, tagged with PIT and internal acoustic tags, and have scale and tissue samples collected. A small subset of juvenile Chinook salmon and steelhead would be lethally sacrificed to collect diet, age, and growth information. Aside from this subset, the NWFSC does not propose to kill any other fish being captured as part of this project, though a small number may die as an unintended result of the research activities.

23798

Michael Rogner, Senior Restoration Ecologist at River Partners is seeking a new, 5 year research permit that would allow him to take juvenile SacR winter-run and CVS Chinook salmon, and CCC and CCV steelhead in the Sacramento River, CA. The project's goal is to measure the effectiveness of an experimental approach to prolonging floodplain inundation for the purpose of maximizing growth and survival among outmigrating juvenile salmon. This research would benefit listed species by helping managers find new ways to convert floodplain areas throughout the Central Valley into habitat suitable for rearing juvenile salmon. Fish would be captured with fyke nets and anesthetized, measured, weighed, tagged, and tissue-sampled for genetic information. The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the research activities.

25839

ICF Consulting is seeking a new, 5 year research permit to annually take juvenile CCV spring-run Chinook and juvenile CCV steelhead in the Lower Yuba River. The purpose of this research is to quantify habitat productivity and juvenile salmonid growth in seasonally available habitats in the Lower Yuba River. The information would benefit

listed fish by improve our understanding of how juvenile salmonids use these habitats for rearing. The researchers would survey main channel, side-channel, and intermittently inundated gravel bar habitats and identify environmental factors underlying differences among the various sites. This information, in turn, would be used to evaluate some of the assumptions about juvenile salmonid growth and habitat suitability that currently guide scientific and restoration efforts—thus improving such efforts' efficacy.

The researchers would employ single-pass transect backpack electrofishing to capture salmonids. Fish would be anesthetized, measured, clipped, weighed, and photographed. While electrofishing collection efforts would target salmonids, the researchers also expect to encounter known salmonid predators (*e.g.,* Sacramento Pikeminnow). Each captured predatory fish would be measured and released. The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the research activities.

25856

Steve Zeug, Senior Scientist at Cramer Fish Sciences is seeking a new, 5 year research permit to take adult and juvenile CCV steelhead in the Stanislaus River. The project's goal is to provide information on the river's *O. mykiss* population: annual growth rates, age and spatial structure, contribution of resident and anadromous parents to juvenile production, probability of juvenile outmigration, abundance and survival of downstream migrants, and timing, age, and size structure of outmigrating fish. This research would benefit listed steelhead by improving our fundamental understanding of Central Valley *O. mykiss* biology and ecology—information that would be used to better manage and conserve the species.

The fish would be captured by backpack and raft electrofishing, hook-and-line sampling, beach seines, fyke nets and rotary screw traps. Some fish would be anesthetized, measured, weighed, tagged, and tissue-sampled for genetic information.

The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the research activities.

25965

The ODFW is seeking a new, 5 year research permit to conduct research on hatchery salmon that may become infected with a harmful parasite (*Ceratonova shasta*) between their release into the Deschutes River (Oregon) and their arrival at the Bonneville Dam on the Columbia River. The purpose of this research is to determine whether this parasitic infection is a causal mechanism related to poor smolt-to-adult return rates among non-listed hatchery Chinook salmon originating at the Round Butte hatchery on the Deschutes River. It would also indirectly inform the currently ongoing listed MCR steelhead reintroduction program on the Deschutes River. Both of these efforts would benefit listed salmonids by helping managers quantify the degree of adverse effect the parasite is having in the Deschutes and Columbia Rivers.

Under this permit, PIT-tagged juvenile hatchery spring Chinook would be sampled at the Bonneville Dam juvenile bypass system. The sort-by-code system at the structure would be set to separate PIT-tagged Round Butte Hatchery spring Chinook from the rest of the outmigrating salmon as they move through the dam. The segregated fish would be diverted by watered pipe into a holding tank, transferred as quickly as possible to buckets of aerated fresh water, and passed through a PIT-tag reader to confirm their identity as target fish. The target fish (which are not listed under the ESA) would then be euthanized, but all captured ESA-listed fish would swiftly be transferred to the bypass release tank at the juvenile fish facility and returned to the river without anesthesia or further handling. No listed fish would be killed during the course of this research.

26049

Dr. Robert Lusardi, Research Ecologist at the Center for Watershed Sciences, University of California, Davis, is seeking a new, 5 year research permit to annually take

juvenile SacR winter-run chinook and CCV steelhead in the Sacramento River, CA, below Keswick Dam. The project's goal is to gather data on how different environmental variables affect juvenile steelhead growth in spring-fed, runoff, and regulated reaches of the Sacramento River. This research would benefit listed species by providing data to improve our understanding of the mechanisms affecting salmonid growth in different ecosystems across the landscape, but specifically those effects in regulated rivers below dams.

The fish would be captured by minnow traps, beach seines, and hook-and-line sampling. The majority of fish would be captured, handled and released without harm, but 25 juvenile CCV steelhead would be sacrificed each year in order to conduct otolith analysis. It is also possible that a very small number of juvenile SacR winter-run Chinook would die as an unintended consequence of the proposed action.

26287

The WDFW is seeking a new, 5 year research permit to sample for invasive European Green Crab (EGC) at several locations in the Puget Sound, along the Washington Coast, and in the Lower Columbia River estuary. Though the researchers would not target listed species, they may encounter juvenile PS Chinook salmon, PS steelhead, HCS chum salmon, OL sockeye salmon, SR fall-run Chinook salmon, SR spr/sum Chinook salmon, SRB steelhead, SR sockeye salmon, UCR spring-run Chinook salmon, UCR steelhead, UWR Chinook salmon, UWR steelhead, CR chum salmon, LCR Chinook salmon, LCR steelhead, and LCR coho salmon while conducting this work in the lower Columbia River. They may also encounter adult SDPS eulachon, a species for which there are currently no take prohibitions. The researchers would conduct this work in conjunction with the Northwest Straits Commission (under Permit 26352) and Washington Sea Grant (under Permit 26359).

The goal of the research is to determine the extent of the threat posed by the EGC invasion in the in Washington State and, where possible, help mitigate it. The research would benefit listed species by monitoring, trapping, and removing individuals of an invasive species that is known to greatly damage eelgrass beds—an important habitat type upon which juvenile salmonids depend for rearing and food production. The researchers propose to use minnow traps, shrimp traps, and Fukui traps (and equivalent modifications of such traps) to capture the crabs. Trap configurations and locations would be adjusted to minimize the risk of encountering adult salmonids or hindering adult passage through main migration channels. The researchers do not propose to anesthetize, tag, sample, or kill any of the captured fish, but a small number may die as an unintended result of the trapping activities.

26295

Mount Hood Environmental is seeking a new, five-year research permit to conduct an inventory of all fish and their relative abundances in the Grande Ronde River in Eastern Oregon. The work would concentrate specifically on predators that may target listed salmonids. It is thought that such predators are a major source of listed salmonid mortality in the Grande Ronde subbasin. This research would help determine if that is the case and, ultimately, help managers design actions (e.g. predator mitigation) to benefit the listed animals.

The researchers would use backpack or boat-mounted electrofishing, fyke netting, seining, angling, and minnow trapping to perform the inventories in each study reach. Fyke and minnow traps would be deployed for several days and checked every 4-6 hours during the day. Electrofishing, beach seining, and angling would be take place in conjunction with the trapping efforts. All ESA-listed fish would be released immediately following capture and identification. If any of these fish exhibit sign of stress (gill flaring, loss of equilibrium, slow reaction to touch, etc.) they would be allowed to recover in a

holding tank (or bucket) of aerated water before being released. The researchers do not intend to kill any of the fish being captured, but a small number may die as an unintended result of the activities.

26331

The ODFW is seeking a new, five-year research permit to implant acoustic tags in adult MCR steelhead at Bonneville Dam on the Columbia River and monitor the fishes' subsequent migration patterns and routes. The fish would be taken and tagged as they pass through the Bonneville Dam adult fish facility. Captured adult steelhead would be anesthetized, held in an oxygenated, river-temperature tank, and implanted with an acoustic transmitter once they are fully anesthetized. Following their recovery from anesthesia, tagged adult steelhead would be released immediately upstream of the adult fish trap and allowed to proceed up the fish ladder to cross Bonneville Dam. The fish would then be tracked by acoustic receiver arrays in upstream reservoirs and dams and at a location near the confluence of the Columbia and John Day Rivers.

The research is intended to generate information about adult MCR steelhead migration and, in particular, it is intended to help managers address the question of why so many steelhead that originate in the John Day River tend to swim past that river and continue up the Columbia River when they return as adults. Currently, approximately 60% of the returning steelhead overshoot the John Day River when they return as adults. If managers can figure out why that is the case and develop measures to reduce that percentage (i.e., help the fish find their way back to their spawning grounds), it could potentially greatly increase their survival and, therefore, improve spawning success and overall steelhead numbers in the John Day River. The researchers do not intend to kill any of the fish being tagged, but a small number may die as an inadvertent result of the capturing and tagging activities.

26334

Dr. Robert Lusardi, Research Ecologist at the Center for Watershed Sciences, University of California, Davis, is seeking a new, five-year research permit that would allow him to annually take juvenile CCC coho in the Walker Creek drainage, CA. The project's goal is to study juvenile coho movement and characterize how they use over-summering habitat in the drainage. This research would benefit CCC coho by providing data on habitat use and outmigration timing—information that would be used to inform habitat restoration and species recovery efforts. The fish would be dip-netted and observed during snorkel surveys. Some of the captured fish would be anesthetized, measured, weighed, PIT tagged, and tissue-sampled for genetic information. The researchers do not expect to kill any listed salmonids but a small number may die as an unintended result of the research activities.

26352

The Northwest Straits Commission is seeking a new, five-year research permit that would allow them to interact with listed fish while capturing, monitoring, and removing EGCs at multiple locations in the North Puget Sound, Washington. Though the researchers would not target listed species, they may encounter adult and juvenile PS Chinook and PS steelhead. The researchers would conduct this work in conjunction with the WDFW (under Permit 26287) and Washington Sea Grant (under Permit 26359).

The goal of the research is to determine the extent of the threat posed by the EGC invasion in the North Puget Sound in Washington State and, where possible, help mitigate it. The research would benefit listed species by monitoring, trapping, and removing individuals of an invasive species that is known to greatly damage eelgrass beds—an important habitat type upon which juvenile salmonids depend for rearing and food production. The researchers propose to use minnow traps, shrimp traps, and Fukui traps (and equivalent modifications of such traps) to capture the crabs. Trap configurations and locations would be adjusted to minimize the risk of encountering adult

salmonids or hindering adult passage through main migration channels. The researchers do not propose to anesthetize, tag, sample, or kill any of the captured fish, but a small number may die as an unintended result of the trapping activities.

26359

Washington Sea Grant (WSG) is seeking a new, five-year research permit that would allow them to interact with listed fish while capturing, monitoring, and removing EGCs at several locations in Puget Sound and along the coast of Washington. Though the researchers would not target listed species, they may encounter adult and juvenile PS Chinook and PS steelhead, HCS chum, OL sockeye, and SDPS green sturgeon while sampling and removing the invasive crabs. The researchers may also encounter adult and juvenile SDPS eulachon, a species for which there are currently no take prohibitions. The WSG researchers would carry out this work in conjunction with the WDFW (under permit *26287*) and the Northwest Straits Commission (under permit *26352*).

The goal of the research is to determine the extent of the threat posed by the EGC invasion in Washington State and, where possible, help mitigate it. The research would benefit listed species by monitoring, trapping, and removing individuals of an invasive species that is known to greatly damage eelgrass beds—an important habitat type upon which juvenile salmonids depend for rearing and food production.

The researchers propose to use minnow traps, shrimp traps, and Fukui traps (and equivalent modifications of such traps) to capture the crabs. Trap configurations and locations would be adjusted to minimize the risk of encountering adult salmonids or hindering adult passage through main migration channels. All listed animals that may be captured would be handled only long enough to identify them to species. They would then swiftly be removed from the trap and released. The researchers do not propose to anesthetize, tag, sample, or kill any of the captured fish, but a small number may die as an unintended result of the trapping activities.

The South Puget Sound Salmon Enhancement Group (SPSSEG) is seeking a new, 5 year research permit that would allow them to annually take adult and juvenile PS Chinook salmon, PS steelhead, and HCS chum salmon while conducting research designed to help plan and monitor habitat restoration projects in several watersheds that drain into central and southern Puget Sound. The goals of this work are to (1) identify potential restoration sites based on fish presence, (2) investigate options to improve restoration design at planned sites, and (3) record and evaluate changes in salmon and steelhead population characteristics in response to estuarine habitat restoration actions.

The researchers propose to capture juvenile fish using electrofishing, minnow traps, beach seines, and hook and line sampling. Juvenile salmon and steelhead would be handled (anesthetized, weighed, measured, and checked for marks or tags), and released. A subset of juvenile salmon and steelhead may be PIT-tagged and have their stomach contents non-lethally sampled via gastric lavage. No adult fish would be targeted for sampling, though some may be unintentionally captured in juvenile sampling gear. The researchers do not propose to kill any fish at all but some may die as an unintended result of the activities.

This notice is provided pursuant to section 10(c) of the ESA. NMFS will evaluate the applications, associated documents, and comments submitted to determine whether the applications meet the requirements of section 10(a) of the ESA and Federal regulations. The final permit decisions will not be made until after the end of the 30-day comment period. NMFS will publish notice of its final action in the **FEDERAL REGISTER.**

Dated: February 10, 2022.

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Angela Somma,

Chief, Endangered Species Division,

Office of Protected Resources, National Marine Fisheries Service

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